

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No.: 10/792,029 : Art Unit: 3768
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For: SYSTEMS, METHODS, AND :
APPARATUS FOR PREPARATION, :
DELIVERY AND MONITORING OF :
RADIOPHARMACEUTICALS :

DRAFT PROPOSED CLAIMS

86. (currently amended) A portable medical radiopharmaceutical administration system comprising:

a moveable structure mounted on wheels to be moveable ~~through a medical facility to and from a positron emission tomography (PET) imaging system,~~ the moveable structure including radioactivity shielding;

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a multi-dose container to hold a multi-dose quantity of liquid radiopharmaceutical;

a dispensing station to receive the multi-dose quantity of radiopharmaceutical, ~~the dispensing station having a pump and a liquid transfer line,~~ to dispense doses of the radiopharmaceutical at the positron emission tomography imaging system;

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~~an ion chamber to measure a radioactivity of at least one dose prior to injection, wherein the multi-dose container including the multi-dose quantity, the dispensing station, the ion chamber and the liquid transfer line are enclosed within the radioactivity shielding while moved through the medical facility to and from the PET imaging system on the moveable structure; and~~

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a computer system provided on the moveable structure, the computer system to control the pump to withdraw an individual dose from the multi-dose quantity in the multi-dose container, the computer system to determine a radioactivity of the individual dose based on a radioactivity measurement from the ion chamber, the computer system to control the pump to inject the individual dose to a patient.

87. (currently amended) The portable system of claim 86, wherein the computer system verifies an adequacy of the individual dose immediately prior to injection while in close proximity to a site of injection proximate the PET imaging system.

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88. (currently amended) The portable system of claim 86, wherein the computer system calculates a dosage for the individual dose based on at least one of a half-life of the pharmaceutical and a weight of the living subject.

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89. (currently amended) The portable system of claim 86, wherein the dispensing station includes an extractor to convey the individual dose from the multi-dose container holding the multi-dose quantity to the ion chamber, the ion chamber to measure the radioactivity of the individual dose.

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90. (currently amended) The portable system of claim 86, wherein the computer system calculates the individual dose based on at least one of a weight and sex of a living subject, wherein the dispensing station comprises an extractor that extracts an amount of the radiopharmaceutical corresponding to the individual dose calculated.

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91. (currently amended) The portable system of claim 86, wherein the computer system has a graphical user interface operably coupled to the dispensing station and ion chamber, the computer system recording the doses delivered to living subjects.

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92. (currently amended) The portable system of claim 86, wherein the computer system has a graphical user interface operably coupled to the dispensing station and ion chamber, the computer system calculating the individual dose based on a weight of the living subject.

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93. (currently amended) The portable system of claim 92, wherein the computer system calculates an amount of dose radioactivity for the individual dose, the dispensing station comprising an extractor that extracts an amount of the radiopharmaceutical from the ~~multi-dose~~ container until the ~~ion chamber~~ measures an amount of extracted radioactivity that corresponds to the amount of dose radioactivity calculated by the computer system.

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94. (currently amended) The portable system of claim 86, ~~wherein~~ the computer system ~~stores~~ at least one of dosing data and an initial dose activity at an initial time.

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95. (previously presented) The portable system of claim 86, further comprising a quality control unit provided within the radioactivity shielding on the moveable structure, the quality control unit being operably coupled to the dispensing station, the quality control unit monitoring a radioactivity of the liquid radiopharmaceutical prior to being dispensed by the dispensing station.

96. (previously presented) The portable system of claim 86, wherein the quality control unit monitors at least one of an amount, quality and quantity of the radioactivity.

97. (previously presented) The portable system of claim 86, wherein the quality control unit performs the monitoring at particular time intervals.

98. (previously presented) The portable system of claim 86, wherein the quality control unit performs the monitoring for a production batch of the radiopharmaceutical.

99. (previously presented) The portable system of claim 86, wherein the quality control unit calculates an amount of radioactivity based on at least one of a half-life of the radiopharmaceutical and an amount of time lapsed since production of the radiopharmaceutical.

100. (previously presented) The portable system of claim 86, further comprising a communications device provided on the moveable structure to communicate over a link with a remote computer, the communications device conveying at least one of status information, commands, dosage information, and dose production information.

101. (previously presented) The portable system of claim 86, wherein the liquid transfer line is lead-shielded.

102. (currently amended) The portable system of claim 86, wherein the ion chamber is located within the dispensing station.

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103. (new) The portable system of claim 86, wherein the liquid transfer line is disposable and removable from the radioactivity shielding.

104. (new) The portable system of claim 86, further comprising a saline reservoir and a valve enclosed in the radioactivity shielding, the valve communicating with the saline reservoir and with the multi-dose container, the computer system to control the pump and valve to extract and inject the individual dose and saline.